

PATENT

Serial No. 10/520,315

Amendment in Reply to Office Action mailed on February 5, 2007

REMARKS

This Amendment, originally filed May 1, 2007 is being (re)filed in response to the Office Action mailed February 5, 2007, to correct a typographical error in Claim 11 noted by Examiner Group in a telephone call to the undersigned on May 18, 2007. Applicants thank the Examiner for bringing the error to their attention. Reconsideration and allowance of the present application in view of the amendments made above and the remarks to follow are respectfully requested.

In the Office Action, the Examiner objected to claims 1-14 for certain informalities. In response, claims 1-14 have been amended to remove the informalities noted by the Examiner as well as other informalities. Accordingly, withdrawal of the objection to claims 1-14 is respectfully requested. Claims 1-14 were not amended in order to address issues of patentability and Applicants respectfully reserve all rights under the Doctrine of Equivalents.

In the Office Action, claims 6, 8 and 14 are rejected under 35 U.S.C. §112, second paragraph as allegedly indefinite. In response, claims 6, 8 and 14 have been amended to remove the informalities noted by the Examiner. It is respectfully submitted that the rejection of claims 6, 8 and 14 has been overcome and an indication as such is respectfully requested.

In the Office Action, claims 1-9 and 11-14 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent No. 6,417,127 (Yamamoto). Further, claim 10 is rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Yamamoto in view of U.S. Patent No. 5,028,362 (Janney). It is respectfully submitted that claims 1-16 are patentable over Yamamoto and Janney for at least the following reasons.

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Yamamoto is directed to a polycrystalline ceramic which is translucent, as recited throughout, including the abstract. Thus, Yamamoto is similar to the background prior art described on page 1, line 14, namely being only translucent and NOT transparent.

In stark contrast, the present invention as recited in independent claim 1, and similarly recited in independent claim 11, amongst other patentable elements requires (illustrative emphasis provided):

wherein the alumina contains a concentration from 0.1 to 0.5 wt-% inclusive ZrO_2 as an additive and has an average crystal size $\leq 2 \mu\text{m}$, a relative density higher than 99.95%, and is transparent.

A transparent alumina is nowhere taught or suggested in Yamamoto. As correctly noted on page 3 of the Office Action, Yamamoto does not include zirconia within the claimed range. "However Yamamoto et al teach examples below and above [the] range of the instant claims, therefore one of ordinary skill in the art would expect the same results would be achieved at compositions between the examples." (Office Action, page 3, item 7)

Applicants strongly disagree and point out that, conventionally, it was believed that adding ZrO_2 as a dopant degrades optical transmittance, as described on page 3, lines 10-15 of the present application. As recited on page 4, lines 1-5, it was unexpected to achieve a transparent ceramic despite the presence of zirconia additives, so long as the proper amount or concentration and crystal size are used. Further, without the proper concentration and crystal size of ZrO_2 optical transmission degrades, as can also be seen from the last row of the table on page 6.

Thus, even though Yamamoto's examples include ranges that are below and above range recited in the present claims, it is abundantly clear from the recitations throughout Yamamoto that

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such ceramics are only translucent and NOT transparent. Such a result is also confirmed by the last row of the table on page 6 of the present application, where optical transmission drops considerably when further ZrO_2 is added.

In summary, Yamamoto does not teach or suggest a transparent alumina, as recited in independent claims 1 and 11. Janney is cited in rejecting dependent claim 10 to allegedly show other features and does not remedy the deficiencies in Yamamoto. Accordingly, it is respectfully submitted that independent claims 1 and 11 is allowable, and allowance thereof is respectfully requested. In addition, it is respectfully submitted that claims 2-10 and 12-16 should also be allowed at least based on their dependence from independent claims 1 and 11.

In addition, Applicants deny any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicants reserve the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

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In view of the above, it is respectfully submitted that the present application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

Respectfully submitted,

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April 30, 2007

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May 18, 2006